Livestock Grazing and Vegetation Management on Six Geographic Areas

Rangeland Vegetation Report

for the Little Horn Watershed Geographic Area

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Note: Don’t use the Heading 1 style. It is reserved for chapter headings. It has some automatic functions built into it and will booger up your specialist report, and more importantly, the EIS documents, if you use it.

Introduction and Overview of Issues

This discussion addresses Rangeland Vegetation within the Little Horn Watershed. It describes the affected environment and environmental consequences of alternatives to the proposed action relative to issues that have been developed as described in detail in Chapter 1. Issues identified as key and non-key will be used to compare the effects of the actions for each alternative.

This Rangeland Vegetation Specialist Report will discuss the affected environment and identify effects of actions to 3) Riparian vegetation and 4) Upland vegetation.

The remaining key and non-key issues are addressed in Wildlife, Economics, Aquatics, Livestock Grazing, and Invasive Species Specialist Reports and project files.

This report is arranged to describe the affected environment and environmental consequences that apply to all allotments in the described area (Watershed-wide) and those that apply to specific allotments only (Allotment specific).

Affected environment descriptions and effects analysis was arrived at through review of Tongue RD 2210, 2230, and 2240 files, review of the Revised Forest Plan, and other handbook, manual, and internal reference material, along with personal experience of the authors. The analysis included review of livestock grazing reference material from the early 1900's, but focused approximately on the past 20 years. Spatial context was the project area, with the exception of cumulative effects.

Table 3-1 lists Connected Actions, Past, Present, and Foreseeable Activities Relevant to Cumulative Effects Analysis.

Each alternative that will be analyzed in detail is described in Chapter 1, and summarized below.

Alternative 1: No Action: No domestic livestock grazing would be permitted. Improvements not needed for other resource uses would eventually be removed as time and funding allows.

Alternative 2: Livestock Grazing with Current Management: Livestock grazing would continue as prescribed under the current allotment management plans (AMPs) or, in the absence of such a plan, under the annual operating instructions (AOIs). Existing improvements would be maintained and would be reconstructed as needed. New improvements not currently authorized under a NEPA decision would not be developed without further NEPA analysis and decision.

Alternative 3, Proposed Action: Continuation of livestock grazing under this alternative will use adaptive management to focus on the end results for the resource.

Affected Environment

Watershed-Wide

The Little Horn project area is located on the east slope of the Bighorn National Forest as shown on the project area map. The Dry Fork Ridge, Lake Creek, Lower Dry Fork and West Pass allotments lay east of the Little Bighorn River. Elevations in the project area range from 4,500 to 9,800 feet. Soils within the project area are primarily sedimentary. Areas described as Rangeland vegetation within these allotments are lands that include strong representation by herbaceous and graminoid species. Rangelands include, but are not limited to: grasslands, forblands, shrublands, open-canopied forests, and associated riparian, wetland and aquatic areas. Well-managed rangelands provide forage and cover for wildlife and domestic

livestock, in addition to high quality water and numerous recreational values. (USDA Forest Service 1996). Rangeland vegetation is typically found in the valley bottoms and small openings flanked with steep slopes and/or thick-timbered ridges.

The project area is dominated by a diversity of upland species, partly due to differences in elevation, soils and precipitation patterns. Upland plant communities are typically dominated by Idaho fescue (Festuca idahoensis) and perennial forbs such as Geranium and Lupine. Other desirable forage species present include, but are not limited to: Wheatgrasses (Agropyron spp.), Needlegrasses (Stipa spp.) and Bromes (Bromus spp.). Plant communities dominated by Willow (Salix spp.) and Sedges (Carex spp.) are common in riparian areas. Sagebrush occurs throughout much of the project area. Conifer encroachment into rangelands is common. Treatment throughout the watershed is proposed and on-going, based largely on the need to maintain rangeland vegetation for livestock grazing.

The project area has been and continues to be grazed by wild ungulates (Elk, Mule deer, Moose). In the project area some observations have been made of excessive browsing of aspen and willow, most likely by elk, moose, and in some cases cattle. Long-term effects can be reductions in vigor or reproductive ability of these plants and changes in species and plant community composition and cover.

The Dry Fork Ridge, Lake Creek, Lower Dry Fork and West Pass allotments are currently grazed by cattle (Specialist Report for Livestock Grazing). Grazing has occurred in these areas since the late 1800's. Effects on rangeland vegetation from livestock can be similar to those of wildlife. While some effects are considered acceptable and/or desirable (such as moderate grazing and a diversity of seral stages), in some areas impacts can be concentrated, sometimes affecting the same areas year to year, with undesirable results (such as trailing, erosion, or willow suppression).

The Forest Service implements management of rangelands through avenues such as administration of term grazing permits, coordination of wildlife populations and habitat through the Wyoming Game and Fish Department, vehicular use impacts through travel management, conifer and shrub encroachment through prescribed fire or chemical treatments, and fuels management through fire or removal of wood products.

Acres of suitable rangeland quantify forage available for livestock grazing. An update of Rangeland Suitability Analysis for allotments in the project area was completed (Attachment A).

Desired conditions have been described for the Rangeland Vegetation resource at the Forest Plan scale, they were refined for this project area, and site specific benchmark desired conditions have been described for each allotment (Desired Condition Supplement 1-2 and Table 1-2 Desired Conditions and Benchmark Sites). Determinations have been made as to whether current conditions are meeting or moving toward desired conditions at the Benchmark scale (Table 3, Key Areas and Benchmark Sites) and described in this report on an allotment by allotment basis, as follows:

Allotment Specific

Dry Fork Ridge C&H

The allotment encompasses 7,505 acres of the project area. Elevations range from 5,100 feet to 8,300 feet. The most recent Rangeland Suitability analysis (1959) for this allotment indicated 931 acres are suitable for cattle grazing. A review of these acres using GIS, coupled with on the ground knowledge, indicates 618 acres are suitable for livestock grazing. Conifer

encroachment, distance to water and accessibility all contribute to the decrease in suitable acres.

Benchmark site monitoring using the Parker Three-Step method indicates upland rangeland vegetation on the allotment is not meeting or moving toward desired conditions. Cover-Frequency monitoring was established on top of the existing Parker transects, or in areas long-term monitoring was insufficient, to establish baseline monitoring information for use in determining condition and trend in the future. Riparian rangeland vegetation is not a grazeable component of this allotment.

Difficult access and other priorities on the district have resulted in no annual use monitoring collected on the allotment in the past 10 years.

Since 2006, there has been a 42% reduction in permitted AUMs (Livestock Grazing specialist report). Effects to rangeland vegetation from this reduction are not likely to be realized for another 7-10 years.

Lake Creek C&H

The allotment encompasses 29,228 acres of the project area. Under current management (past 10 years), the East Burnt and Parks pastures of the Little Horn C&H allotment provide an additional 2,884 allotment acres. Elevations range from 4,700 feet to 9,200 feet. The most recent Rangeland Suitability analysis (date not known) for this allotment indicated 3,992 acres are suitable for cattle grazing. A review of these acres using GIS, coupled with on the ground knowledge, indicates ~~3,412~~3,411 acres of the allotment, plus 469 acres of the East Burnt and Parks pastures, are suitable for livestock grazing. Accessibility and, to a limited extent, conifer encroachment contribute to the decrease in suitable acres.

Benchmark site monitoring using the Parker Three-Step method, indicates upland rangeland vegetation on the allotment is not meeting or moving toward desired conditions. Cover-Frequency monitoring was established on top of the existing Parker transects, or in areas long-term monitoring was insufficient, to establish baseline monitoring information for use in determining condition and trend in the future.

Riparian rangeland vegetation comprises approximately 20% of the suitable acres in the allotment. These areas appear to be meeting or moving towards desired conditions based on a field review with the forest hydrologist and interpretation of photographs taken in 2009.

Other priorities on the district have resulted in sporadic annual use monitoring collected on the allotment in the past 10 years. Monitoring collected demonstrates that standards have not been consistently met, typically in riparian areas. In the past few years herd management has improved and standards have been meet more consistently.

Actual use of the allotment has been 54% of permitted for the past ten years (Livestock Grazing specialist report).

Lower Dry Fork C&H

The allotment encompasses 7,167 acres of the project area. Elevations range from 4,700 feet to 8,000 feet. The most recent Rangeland Suitability analysis (1981) for this allotment indicated 3,227 acres are suitable for cattle grazing. A review of these acres using GIS, coupled with on the ground knowledge, indicates ~~1,462~~1,460 acres are suitable for livestock grazing. Conifer encroachment is the primary factor contributing to the decrease in suitable acres.

Benchmark site monitoring using the Parker Three-Step method indicates upland rangeland vegetation on the allotment is not meeting or moving toward desired conditions. Cover-

Frequency monitoring was established on top of the existing Parker transects, or in areas long-term monitoring was insufficient, to establish baseline monitoring information for use in determining condition and trend in the future.

Riparian areas on the allotment primarily consist of intermittent spring-fed channels through timbered draws. Riparian rangeland vegetation comprises a minimal portion of the suitable acres in the allotment and exists as isolated, small pockets along the spring-fed channels.

Difficult access and other priorities on the district have resulted in no annual use monitoring collected on the allotment in the past 10 years.

Since 2006, there has been a 75% reduction in permitted AUMs (Livestock Grazing specialist report). Effects to rangeland vegetation from this reduction are not likely to be realized for another 7-10 years.

West Pass C&H

The allotment encompasses 2,471 acres of the project area. Elevations range from 5,400 feet to 8,000 feet. The most recent Rangeland Suitability (1958) analysis for this allotment indicated 1,363 acres are suitable for cattle grazing. A review of these acres using GIS, coupled with on the ground knowledge, indicates 884 acres are suitable for livestock grazing. Encroachment by confers and nine-bark are the primary factors contributing to this decrease in suitable acres.

Benchmark site monitoring using the Parker Three-Step method indicates upland rangeland vegetation on the allotment is not meeting or moving toward desired conditions. Cover-Frequency monitoring was established on top of the existing Parker transects, or in areas long-term monitoring was insufficient, to establish baseline monitoring information for use in determining condition and trend in the future.

Riparian rangeland vegetation on the allotment is primarily associated with the headwaters and stream course of the South Fork of West Pass Creek in the Upper pasture. These areas appear to be meeting desired conditions based on interpretation of photographs taken in 2009.

Difficult access and other priorities on the district have resulted in no annual use monitoring collected on the allotment in the past 10 years.

Since 2006, there has been a 22% reduction in permitted AUMs (Livestock Grazing specialist report). Effects to rangeland vegetation from this reduction are not likely to be realized for another 10-15 years.

Environmental Consequences

Watershed-wide

Alternative 1 No action no grazing: Direct, Indirect, and cumulative effects:

Livestock effects to areas of upland and riparian rangeland vegetation (through grazing and browsing on aspen, riparian, and upland vegetation, as well as physical impacts to soil) would no longer occur. In most areas there is no clear separation between effects of livestock and those of wild ungulates, so the changes likely to occur from livestock removal are one of degrees rather than total cessation of all grazing effects. There would likely be some change in reproductive ability of plants and vigor, as well as in species composition, plant community composition, and cover.

Long-term trend of rangeland vegetation on a landscape scale would likely be toward later seral plant communities, with the exception of small isolated pockets of vegetation where repeated wild ungulate impacts continue to occur. Most benchmark sites would be expected to show a trend toward desired conditions. Eventually, however, many sites (dependent upon a wide variety of variables such as time, precipitation, degree of wildlife impacts, site potential, etc) would trend away from desired conditions.

In many areas, long-term removal of domestic livestock from rangelands may result in a decrease in species diversity in the plant community where those plant communities are disturbance regime dependent (such as grasslands or many shrublands).

Although wildlife will continue to use rangelands, excess forage not removed annually by livestock will accumulate as litter, particularly in areas of high production. The risk of occurrence and rate of spread of wildfire would increase as a result of accumulation of fine fuels.

Alternative 2 Current Management: Direct, Indirect, and cumulative effects:

This alternative assumes stocking levels will remain within recent historic levels. For the purposes of this report, this is the average authorized stocking over the past 10 years (Livestock Grazing Specialist Report).

Livestock effects to areas of upland and riparian rangeland vegetation (through grazing and browsing on aspen, riparian, and upland vegetation, as well as physical impacts to soil) would continue to occur in a manner similar to recent historic patterns and at levels consistent with the revised Bighorn Forest Plan guidelines for forage use.

Impacts to soil and vegetation by permitted livestock (localized soil compaction, streambank alteration, plant defoliation) would continue to occur within parameters described in the Forest Plan.

Reproductive ability and vigor of plants, plant species, plant community composition, and cover will generally be maintained in their present condition.

Long-term trend of rangeland vegetation on a landscape scale would likely be toward later seral plant communities with the exception of small isolated pockets where livestock may congregate, or areas of vegetation where repeated wild ungulate impacts continue to occur.

Benchmark sites would be expected to show a trend toward desired conditions, but more slowly than in alternatives 1 and 3.

Sagebrush treatment and conifer encroachment to maintain rangeland vegetation would continue in accordance with completed NEPA analysis.

Alternative 3 Adaptive management: Direct, Indirect, and cumulative effects:

Livestock effects to areas of upland and riparian rangeland vegetation (through grazing and browsing on aspen, riparian, and upland vegetation, as well as physical impacts to soil) would occur although to a lesser degree than under Alternative 2. Impacts would be limited to more specific time frames and locales as a result of improvements in controlling livestock distribution.

Impacts to soil and vegetation by permitted livestock (localized soil compaction, streambank alteration, plant defoliation) would continue to occur within parameters described in the Forest Plan. These effects would be reduced where adaptive improvements have been proposed as part of alternative 3.

Alternative three would provide additional water points and drift fences. Flexibility to control livestock impacts would be greater than alternative two. Plants would have an increased opportunity to recover from grazing impacts, and different plants would be grazed by livestock year-to-year at different times. Plant reproductive ability and vigor would continue to improve in many areas, and planned changes in species, plant community composition, and cover would occur more rapidly than under alternative 2.

Long-term trend of rangeland vegetation on a landscape scale would likely be toward later seral plant communities, with the exception of small isolated pockets of vegetation where repeated wild ungulate impacts would continue to occur, or in areas where other activities or impacts are the key factors (conifer encroachment, sage density increase, OHV impacts, etc.).

Benchmark sites not currently considered to be meeting or moving toward desired conditions would be expected to show a trend toward desired conditions. Benchmark sites considered to be moving toward desired condition would be expected to show a more rapid trend toward desired conditions than under Alternative 2.

Sagebrush and conifer encroachment would continue to be reduced which will increase and maintain forage production and availability for ungulate species as well as other wildlife.

Cumulative Effects:

The activities listed in Table 3-1 (attached) were considered in the cumulative effects analysis for Rangeland Vegetation. The Allotment boundaries and adjacent allotments were considered in this analysis over the time frame that livestock have been authorized on the Forest (1906 to present).

Alternatives 1, 2, and 3:

Historic uses continue to be evident in rangeland vegetation today. For example, some areas are continuing to recover from impacts of heavy livestock grazing and trailing in the early 1900's. Riparian areas altered by historic flood events also continue to recover. Recovery of these areas would likely occur under all three alternatives.

Fire suppression activities in the past have resulted in conifer encroachment in many areas, which in turn reduce total acres of rangeland vegetation, as well as forage production and availability. The encroachment may also be reducing the amount of water that filters through the watershed and reaches rangeland vegetation sites, possibly contributing to the drying of these sites, and shifting species composition in some riparian areas. Roads and trails can also channel water and influence species composition.

Under action alternatives 2 and 3 there would continue to be conflicts about the effects of livestock and wildlife activities, such as willow browse and grazing levels. There would also continue to be effects by livestock due to wildfire and prescribed fire management, and there may be conflicts between livestock grazing and recreation activities that result in bare soils and spread of invasive species.

Under action alternatives 2 and 3 sagebrush treatment and conifer encroachment treatment efforts would continue on all allotments where it is considered necessary in an effort to maintain rangeland vegetation in accordance with completed NEPA analysis.

Expectations are that under all three alternatives the impact of human activities to rangeland vegetation would increase as the population of local communities increases, "baby-boomers" retire, and as more people nationwide continue to seek places to recreate.

Implementation of adaptive management described in alternative 3 would likely result in less of a cumulative effect to rangeland vegetation than alternative one or two.

Allotment Specific

Dry Fork Ridge C&H allotment

Alternatives 1and 2:

No direct, indirect, or cumulative effects have been identified beyond those described allotment-wide.

Alternative 3: Adaptive Management:

The administrative act of combining the Lower and Double Springs pastures of theDry Fork Ridge allotment with the Lower Dry Fork allotment as proposed would have no effect on rangeland vegetation.

The reduction in AUMs would be expected to show a stronger trend toward desired condition than under Alternative 2.

Lake Creek C&H allotment

Alternatives 1and 2:

No direct, indirect, or cumulative effects have been identified beyond those described allotment-wide.

Alternative 3: Adaptive Management:

The administrative decision to incorporate the Parks and East Burnt pastures of the Little Horn C&H allotment as proposed will have no effect on rangeland vegetation.

The proposed water developments and fences would help reduce livestock impacts by improving livestock distribution and controlling livestock movement.

The reduction in AUMs would be expected to show a stronger trend toward desired condition than under Alternative 2.

Lower Dry Fork C&H allotment

Alternatives 1and 2:

No direct, indirect, or cumulative effects have been identified beyond those described allotment-wide.

Alternative 3: Adaptive Management:

The administrative act of combining the Lower and Double Springs pastures of the Dry Lower Dry Fork with the Dry Fork Ridge allotment as proposed would have no effect on rangeland vegetation.

The administrative act of sharing use of the Cow Camp pasture with the West Pass allotment would have no effect on rangeland vegetation.

West Pass C&H allotment

Alternatives 1and 2:

No direct, indirect, or cumulative effects have been identified beyond those described allotment-wide.

Alternative 3: Adaptive Management:

The administrative act of sharing use of the Cow Camp pasture of the Lower Dry Fork allotment with the West Pass allotment may help trend towards desired condition.

Compliance with Forest Plan and Other Relevant Laws, Regulations, Policies and Plans

Desired conditions for Upland and Riparian rangeland vegetation would be met under all three alternatives analyzed in detail.

Monitoring Recommendations

None other than that specified in chapters 1 and 2 of the DEIS.

References

Bighorn National Forest Land and Resources Management Plan, Revised 2005
NEPA Analysis and Decision for Aspen/Meadow Enhancement Treatments, June 2006
NEPA Analysis and Decision for Little Horn Rx Burn, **Month YYYY**
Bighorn National Forest Vegetation Grazing Guidelines (USDA Forest Service, Revised 2007)
Attachment A, Rangeland Suitability analysis for Little Horn Watershed Allotments
Supplement 1-2, Desired Condition for the "Big Six" Project Area
Table 1-2, Desired Conditions and Benchmark Sites
Table 3, Key Areas and Benchmark Sites
Specialist Report for Livestock Grazing for Little Horn Watershed Allotments
Rangeland Analysis and Management Training Guide, Region 2, USDA Forest Service 1996
2210 Files, Powder River Ranger District, Bighorn National Forest, USDA Forest Service